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Open and Shut: The Case for Optimizing Air Component Resilient Basing Strategies in an Anti-Access/Area Denial Operating Environment

by

Lt Col Scott "Ruger" Davis

Lieutenant Colonel, US Air Force

OPEN AND SHUT: THE CASE FOR OPTIMIZING AIR COMPONENT RESILIENT BASING STRATEGIES IN AN ANTI-ACCESS/AREA DENIAL OPERATING ENVIRONMENT

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A paper submitted to the Faculty of the Joint Advanced Warfighting School in partial satisfaction of the requirements of a Master of Science Degree in Joint Campaign Planning and Strategy. The contents of this paper reflect own personal views and are not necessarily endorsed by the Joint Forces Staff College or the Department of Defense.

This paper is entirely my own work except as documented in footnotes.

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Abstract

This study is a gap analysis comparing current Joint Force Air Base Opening (ABO) capabilities with those assessed as necessary for effective ABO operations in an Anti-Access/Area-Denial environment. The research focuses on gaps in current doctrine, command relationships, command and control, force structure of ABO forces, posture, training for ABO forces, and acquisition for ABO capabilities. The author does not delve into specific solutions for each of the assessed gaps. The focus is on identifying conceptual challenges and methodologies to address them as well as describing areas for further research. Overall the assessment is that the current construct for Joint Force ABO is too unwieldy and insufficiently agile to perform inside of an A2/AD adversary's Observe-Orient-Decide-Act (OODA) Loop. However, improvements to doctrine, command relationships, command and control, force structure, posture, training, and acquisition will make the joint force better able to project airpower into the A2/AD threat environment.

Dedication

This effort is dedicated to all of the valiant, dedicated, and professional service members who have served in harm's way so that the great American Experiment can continue.

Acknowledgements

I would like to thank the professionals whose knowledge directly contributed to this effort including Colonel Russ Davis, Major Kevin “KT” Thomas, and Major Jeremiah “SMEEgle” Castillo. Their know-how of the strategic, operational, and tactical level doctrine, policies, and best practices of Air Base Opening were invaluable. I’d also like to thank my parents for their insightful feedback and myriad conversations about this and many other topics. Their continued coaching of my writing over the past 30 years has been incredibly helpful. Further, my seminar-mates in JAWS 17-18 are consummate professionals who always keep our discussions both relevant and light hearted – thanks “Twos”.

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Optimizing Air Component Resilient Basing

> *"The line between disorder and order lies in logistics . . ."*
>
> Sun Tzu[1]

Introduction

In his expansive treatise on warfare, Carl von Clausewitz notes that a military commander on the offense ". . . leaves his source of supply behind . . . [u]nder these conditions shortages and difficulties will be the rule".[2] This maxim is as true today as it was in the age of Napoleonic warfare faced by the venerable Clausewitz. Since his time, the joint force has significantly developed our ways of delivery including airlift, sealift, and pre-positioned stores. Additional efforts have resulted in much improved command and control for logistics and sustainment forces. While current means of delivering supplies to warfighters has progressed, the complexity and nature of war have evolved in parallel. As a result, the challenges of resupplying frontline troops can still confound modern warfighters just as in the past. The global nature of modern conflict compounded by worldwide force deployment further complicates this matter. As a recent example, the Iraq war overlaid itself on a fairly robust transportation infrastructure including airfields and roadways. However, this was not the case in Afghanistan. In Afghanistan, sparse infrastructure and challenging terrain confounded transportation. Challenging regional politics further complicated these transportation efforts. .

Despite generations of improvements since the age of Clausewitz, modern strategists and commanders continue to wrestle with logistics. An often quoted airlift maxim asserts that

1. Sun Tzu, Roger Ames (Trans.), *The Art of Warfare: the First English Translation Incorporating The Recently Discovered Yin-ch'euh-shan Texts* (NY: Balentine Books, 1993), 120.
2. Carl von Clausewitz, *On War* (New York: Alfred A. Knopf, 1993), 406.

"amateurs study tactics, professionals study logistics." This notion is at best reductionist and at worst a vast oversimplification. While it is true that tactics alone will not win a war, Clausewitz and many other thinkers from earlier eras conflate the modern concepts of the tactical and operational levels of warfare implying it is all merely tactics. On the contrary, the operational art and the tactics of logistics and sustainment are essential to victory in the modern age. As military logisticians and mobility personnel are apt to identify, absent threats in the operational environment it would be much simpler and economically more feasible to outsource our logistics to one of the many capable civilian contract companies in the world. The presence of persistent threats in the operational and strategic environment drives the need for thoughtful, tactically-minded logistical capabilities in the modern military. To succeed in conflict, forces must be able to deploy into and sustain themselves in contested environs.

The concept of sustained mobility operations must eclipse mere classes of supply and seek to address force resilience in a contested environment with denied communications. The robust nature of adversary capabilities must drive evolving concepts of mobility force employment. Not the least of these is addressing fundamental aspects of doctrine and command and control. Further, commanders and planners should consider incorporating the use of mission-type orders for forces opening and operating airbases.

In the early days of Operations ENDURING FREEDOM and IRAQI FREEDOM, the joint force had a challenge distributing cargo to forward deployed ground units. From the outset, strategic air and sealift forces were relatively successful in transporting cargo into aerial ports of debarkation (APODs) and seaports of debarkation (SPODs). At these APODs and SPODs, however, the joint force was not effective in processing and distributing the cargo to the end

users in the field and on forward operating bases (FOBs).[3] This was the result of ineffective tracking at the ports as well as a lack of joint oversight and involvement in the cargo processing.[4] In an attempt to rectify this problem in future campaigns, the United States Transportation Command (USTRANSCOM) conceptualized and later fielded the Joint Task Force-Port Opening (JTF-PO).[5] The JTF-PO is a combination of either USAF Air Base Opening (ABO) forces or USN Sea Port Opening (SPO) forces paired with USA Rapid Port Opening Elements (RPOEs). In concert, these forces work to open a port, receive inbound cargo, and move it forward to the desired end users.[6]

In 2005, members of the joint force undertook an effort to gather lessons learned and perform a gap analysis for cargo movement operations over the previous three years in Operation ENDURING FREEDOM and Operation IRAQI FREEDOM. The result of this analysis was the stand-up of JTF-PO as a capability under USTRANSCOM. At the time, it was an elegant solution to the problem USTRANSCOM intended this capability to solve. In a theater where the joint force faced little (if any) contest to coalition supremacy of the air and maritime environs, the joint force needed to rapidly resupply ground forces consumed with the ground fight. JTF-PO afforded a robust command and control, logistics, maintenance, and operations capability to fill this niche need. The question facing modern war planners and strategists is "will this capability be sufficient in a more hotly contested theater?" More specifically, "will the JTF-PO construct transfer to an anti-access/area-denial threat environment?"

3. Kenneth Walker, Alethia Reynolds, and Aviana Gutierrez, "Joint Task Force-Port Opening Comes to the Pacific," *Army Logistics*, January-February 2012, 3.
4. *The Joint Warfighting Center Joint Doctrine Series Pamphlet 9: Operational Implications of the Joint Task Force – Port Opening* (Norfolk, VA: The Joint Warfighting Center, 2007), 1.
5. Ibid.
6. Ibid.

The Anti-Access/Area-Denial (A2/AD) threat environment presents more complicated basing challenges for the joint force than the challenges faced in the first three years of conflict in Afghanistan and Iraq. A more robust adversary will potentially have the ability to not only directly attack bases with ground forces, but also to target them with standoff weapons. As such, these adversaries can cause damage to joint air operations with few if any of their own personnel on the ground in vicinity of the airbase. This type of near-peer adversary will also be able to contest the use of the, airspace, maritime, and cyber commons, complicating movement to and operations within forward deployed location. Specifically, the potential for adversary targeting of established joint and coalition main operating bases (MOBs) incurs potential risk to mission, personnel, and equipment. Efforts to mitigate this risk include the concept of resilient basing (also called adaptive basing). Optimizing the air component's ability to employ resilient/adaptive basing is essential to reduce risk to the lowest possible level and effectively accomplish joint force missions.

There is a possibility the air component of the joint force will need to operate in an A2/AD environment in future conflicts and contingency operations. While the expeditionary nature of the joint force enables rapid opening of airbases throughout the world, there is need for more focus on doing so in the A2/AD operating environment. Currently, the joint force is not optimized to so. There are potential shortcomings regarding doctrine, command relationships, command and control, force structure, posture, training, and equipment acquisitions. Not the least of these shortcomings is the ability to operate resilient forward operating locations under a paradigm fundamentally different than previous concepts of MOBs. In order to facilitate resilience, these new basing options will need increased agility not currently part of the joint force concept of opening an airbase and then expanding the lodgment or rapidly relocating it.

Central to the joint forces ability to operate effectively in and project force further into an A2/AD environment is the ability to understand an adversary's time horizons for operations. Planners and operators must have a mental model for comprehending how the adversary recognizes changes in the operational environment and reacts to them. That is to say, it is vital to understand the adversary's targeting cycle. Specific to the purposes of this study, the planners need to know how an adversary will orient, decide, and act when the joint force used ABO to project forces into A2/AD threat environs. While there are many paradigms for understanding how an adversary perceives changes in and reacts to the operational environment, the so-called Observe-Orient-Decide-Act (OODA) loop[7] is an effective methodology for this study. With regard to ABO, adversary forces will first have to determine the existing and potential locations for airfields within the area they seek to deny via their A2/AD capabilities. This is the orient portion of their targeting cycle. As a matter of observation, the adversary will need to monitor all of these potential airbase locations continually for any signs of activity indicating potential or on-going joint force ABO activity. If and when they ascertain through their observations that ABO activity is likely or on-going, the adversary has a decision to make regarding whether or not to target the location and forces and, if so, which weapon they will use for the target. Finally, the adversary will have to act on that targeting and weapon decision. They restart the cycle by observing the targeted airfield location to determine the effectiveness of the weapons. Depending on the adversary capabilities, doctrine, and the size of the operational area this is an onerous and even lengthy process.

7. In the oral history of the USAF Weapons School and the so-called "Disciples of Boyd", it is rumored that the creator of the OODA loop, Col John Boyd (USAF) preferred the moniker "O-O-D-A" Loop but acquiesced as others increasingly documented his model as "OODA".

While our historical constructs for JTF-PO and ABO have served us well, they are likely insufficient for the fights we may face against a near peer rival in the future. The complexity of the A2/AD environment will necessitate lean and agile forces capable of rapid ABO and closing operations in a robust threat environment. Without these adaptations, our sustained ability to forward project force into a robust A2/AD environment will be in peril. Portions of the joint force should reorganize, adapt their training, acquire different equipment, and modify their doctrine to optimize effectiveness of Airbase Opening operations in an A2/AD environment.

Chapter 1: Methods

> *"It is always better to have no ideas than false ones; to believe nothing, than to believe what is wrong."*
>
> Thomas Jefferson[1]

This research will be a gap analysis assessing the capabilities required to optimize effective airbase operations in an A2/AD environment. The gap analysis concept will be to identify current capabilities in each of these areas while simultaneously assessing the advantages and limitations of these approaches writ large. Then, the research will assess these areas versus the A2/AD environment to identify shortcomings specific to ABO in the A2/AD environment. The areas assessed are doctrine, command relationships, command and control of ABO forces, force structure, posture, training, and equipment acquisition. Research will establish the current joint force capabilities to open and operate airbases and the environment for which the joint force optimized these capabilities. Next, the research will identify how to augment and adapt these capabilities for an A2/AD threat environment.

First, the researcher will define the A2/AD environment as pertains to the research. There is sufficient research on this operating environment to define it with regards to Airbase Opening and operating locations. Next, the research addresses the current constructs for opening and operating airbases in contingency operations. The research delves into doctrine documents from across the joint force and from the strategic, operational and tactical levels. Additionally, the source material includes interviews with personnel involved in current training for ABO forces as well as officers currently in units supporting ABO. In total, this information identifies gaps between the current airbase opening/operating construct and requirements of the A2/AD

1. Thomas Jefferson, *Letter from Thomas Jefferson to the Rev. James Madison, 19 July 1788*, https://founders.archives.gov/documents/Jefferson/01-13-02-0280. (Accessed, December 22, 2017.)

environment. This will include recommendations for optimization of personnel assigned, training, resources, and doctrine.

Chapter 2: Definition of Terms

The concepts associated with ABO and resilient basing are, in many ways, still developing within the joint force. In order to discuss current and future capabilities and perform a gap analysis it is important to explain the definitions of the associated terminology adequately. That is not done here in an attempt to prescribe definitions, but rather as a means to alleviate confusion as pertains to current analysis and identify assumptions inherent in the definition of these terms.

In an operation such as DESERT STORM, the joint force enjoyed freedom of maneuver.[1] As the results of that operation showed, affording the US freedom of maneuver–even if outside the adversary's national boundaries–was disadvantageous to an adversary. These efforts to deny a force freedom of movement in a theater of operations are A2/AD. The intent of the anti-access portion of A2/AD is "to render opposing forces unable to make an initial entry into a theater of operations."[2] That is, anti-access efforts are offensive targeting of an adversary's ability to establish or maintain bases in an area of operations. The goals are to hinder logistics and, in turn, limit ability to perform operational maneuver. Area denial efforts are more defensive in nature and focus on increased point and area defense capabilities to the point that an adversary is not willing to accept the risk of operations into the potential engagement zone.[3] These efforts, taken together, are expensive and difficult to obtain. However, they are not out of reach for several near-peer competitors of the US.

1. Jeff Hagan, Forrest E. Morgan, Jacob L. Heim, Matthew Carroll. *The Foundations of Operational Resilience – Assessing the Ability to Operation in an Anti-Access/Area Denial Environment* (Santa Monica, CA: RAND Corporation, 2016), 20.
2. Ibid.
3. Ibid.

The Joint Force method to address A2/AD capabilities is Joint Forcible Entry (JFE). JFE are "operations to seize and hold lodgments against armed opposition".[4] The lodgment, then, is a designated area (in this case an airfield or landing zone) within a hostile area. The purpose of the seizure is to hold to facilitate further force flow into the area for follow-on operations.[5] Following the initial seizure of the lodgment, the seizure force will transition the airfield functions to another force. This is the ABO force with the primary role of enabling air mobility operations bringing in the additional forces and resupply.

While USAF and Joint doctrine discuss the need for opening airbases thoroughly, there is little discussion defining the meaning of airbase opening in USAF or joint publications. It is, however, important to narrow the definition in order to address how it will impact operations in an A2/AD environment. The past fifteen years of operations, particularly in the USfo Central Command area of responsibility, involved inherent assumptions pertaining to ABO. USAF doctrine discusses the forces the US provides to the joint force commander in order to open airbases and discusses some basic responsibilities of ABO forces.[6] In the USAF definition, airbase opening involves "complete site assessments and set up minimum cantonment functions such as force protection (FP), communications, sleeping, feeding, sanitation, and internal medical capability such as public health and advanced life support."[7] That is a significant amount of responsibility and requires a large force structure to accomplish. It is important to note that this is the current vernacular for ABO. Inherent in the definition is the assumption that the airbase will continue to operate for some time and that it does not face an A2/AD threat. For the

4. *Joint Publication 3-18, Joint Forcible Entry Operations* (Washington D.C.: The Joint Staff), I-1.

5. JP 3-18, I-1
6. Air Force Doctrine Annex 4-0, http://www.doctrine.af.mil, accessed October 31, 2017.
7. Ibid.

purposes of this study, however, the focus is on the minimum force required in order to accomplish the mission of launching or recovering aircraft as the mission dictates. It is important, here, to differentiate between airbase *opening* operations and airbase *operations*. Historically, the USAF and joint force partners have been most concerned with establishing airbases for on-going operations. Those follow-on operations might not be advisable in the A2/AD environment. Rather, planners may seek to open the airbase with only essential elements and not seek to further expand the airbase's capability.

In their studies on the air basing in an A2/AD environment, RAND developed the definition of "*operational resilience*: the capacity to withstand attack, adapt, and generate sufficient combat power to achieve campaign objectives in the face of continued, adaptive enemy action."[8] This definition fits well into the lexicon of this study. It identifies that the focus is on generating combat power at the right time and place in spite of deliberate enemy targeting of the base while simultaneously denying freedom of maneuver. For the purposes of this study, the terms resilience and operational resilience are synonymous and used interchangeably.

Authors from RAND note that the term adaptive is synonymous with the term resilient. This is useful as the USAF, in particular the staff of Air Mobility Command (AMC), have preferred the use of "adaptive basing" in their efforts.[9] While not fundamentally different in nature, it does identify potential seams in knowledge and analysis when the nation's leading air mobility proponents are using somewhat dissimilar terminology from the rest of the joint force. When used in this study, adaptive basing refers specifically to AMC-led efforts to better airbase resilience within USTRANSCOM's air component focused on cargo movement operations.

8. Hagan, xi.
9. Major Jerimiah Castillo, Operations Officer, 36th Contingency Response Squadron, Guam, e-mail to author, 9 September 2017.

Another term used in the analysis of operations in the A2/AD environment is the Observe-Orient-Decide-Act or OODA Loop. The late Col John Boyd developed this concept as a model to understand an adversary's internal process for functioning in an operational environment.[10] The understanding was, however, only the first aspect of Col Boyd's model. The operational aspect is what Col Boyd himself called "unraveling the competition."[11] The intent of the OODA Loop was to understand the adversary's methodology, then to disrupt their linear decisions making process to render them less effective. Detailed analysis of the OODA loop results in an incredible degree of nuance. However, the basic understanding will suffice for this analysis.

10. Robert Corham, *Boyd* (New York: Bay Back Books, 2002), 334.
11. Ibid.

Chapter 3: Current Airbase Opening Capabilities

> *"It is easier and more effective to destroy the enemy's aerial power by destroying his nests and the eggs on the ground than to hunt his flying birds in the air."*
>
> Giulio Douhet[1]

There are several existing standing forces designed to facilitate opening of an airbase in order to accomplish joint force commander objectives. The preponderance of these forces have as part of their employment doctrine the assumption of a permissive or semi-permissive environment or that they are following a forcible entry to secure the APOD or SPOD. Further, their employment lends itself to not only opening and operating an airfield, but to further expanding the lodgment in order to transition to sustained operations. This paradigm may, in fact, not be functional in the A2/AD environment.

USAF Contingency Response Forces (CRFs) are a tailorable force from a small two to three person team up to O-6-led organizations with over 120 personnel. The USAF intended these forces to "conduct expeditionary port opening operations for USTRANSCOM and GCCs to enable rapid global mobility."[2] While these forces are rapidly deployable, USTRANSCOM does not intend them for long-term sustainment of an airbase. These forces are also a low density asset with only two Contingency Response Groups under the command of USTRANSCOM under a Contingency Response Wing (CRWs) and one CRG each in US European Command (USEUCOM) and US Pacific Command (USPACOM). Of note, Headquarters Air Mobility Command–the air component of USTRANSCOM–oversees the doctrine development and training of the CRGs (including those gained by USEUCOM and USPACOM). As a result,

1. Giulio Douhet, *The Command of the Air,* trans. Dino Ferrari (1942; new imprint, Washington, DC: Office of Air Force History, 1983), 53–54.
2. *Joint Publication 3-17, Air Mobility Operations* (Washington D.C.: The Joint Staff), II-9.

AMC CRFs focus their efforts on cargo movement operations. However, PACOM and EUCOM forces are evolving into "Building Partner Capacity" and support to other assets.[3]

US Army Rapid Port Opening Elements (RPOEs) are the ground component complement to the USAF CRFs. The RPOEs ensure in-transit visibility of cargo as well as performance clearance operations for cargo arriving or departing an AOR. Also, they "receive and trans load cargo as an initial entry port opening force until relieved by–or are integrated into–follow-on sustainment forces."[4] Ultimately, they serve as the glue between the CR forces off-loading personnel, cargo, and equipment at an airhead and the ground component warfighting units receiving that materiel. This role is critical to timely sustainment in the traditional ABO model.

Joint Task Force Port Opening (JTF-PO), in its simplest sense, is the partnering of a CRG and an RPOE under the command and control of USTRANSCOM.[5] These forces train and exercise together, then perform an alert function to open and establish operations at airbases worldwide. In tandem, these forces are intended to receive and process cargo at an airhead, then transport it to ground component (or other) forces in forward area. In recent experience, USTRANSCOM employed these forces in operations to combat the Ebola outbreak in West Africa. While adversary forces did not contest this operation, the training construct for JTF-PO incorporates taking over airfield operations from a JFE seizure force.[6] Regardless of what portion of the joint force seizes the airfield or landing zone, ultimately, some portion of the joint force will be responsible for the air operations following the seizure. Another important part of

3. Major Kevin Thomas, Flight Commander, Contingency Response Formal Training Unit, 421st Combat Training Squadron, Joint Base McGuire-Dix-Lakehurst, New Jersey, telephone interview by author, 3 January 2018, Norfolk, Virginia.
4. Rapid Port Opening Element Logistics First Responders, https://www.army.mil/article/30486/rapid_port_opening_element_logistics_first_responders, accessed October 31, 2017.
5. JP 3-17, II-6.
6. Thomas interview.

the role JTF-PO plays is the rapid ability to provide a combatant commander (CCDR) an assessment of a port's ability to serve as an APOD for an operation.

The Rapid Raptor program is an example of an air component attempt at a unilateral ABO concept that focused on projecting fighter power rather than on cargo movement.[7] This program pairs F-22 aircrews, F-22 maintainers, C-17 aircrews, and aerial port personnel to rapidly forward deploy F-22 aircraft to austere airfields. Following the deployment, the force package provides a level of sustainment capability for the F-22s. At this point, the program is still under development, but planners have already established numerous potential loadout plans for the C-17.[8] Each of these potential loadouts has differing levels of support depending on potential operational environments.[9] Given that these load plans only involve a single C-17, it is unlikely that these plans would not provide for long-term support for the F-22s.

Another example of progress in this arena is the expansion of C-130J "wet-wing refueling" and "hot refueling" capabilities in US Central Command (CENTCOM). Wet-wing refueling involved de-fueling a C-130J into a fuel truck, fuel bladder, or other fuel storage locations (i.e., fuel blivets) dispersed across the airfield in hastily constructed revetments. The intent of both dispersion and revetments is to increase the survivability of the fuel stores between the download and upload. Hot refueling refers to pumping fuel directly from the C-130J into another aircraft.[10] Both of these capabilities are at the heart of one of the traditional difficulties in opening new APODs–ensuring reliable fueling capabilities for the supported air assets. Historically, these capabilities resided solely in the special operations community.[11] Since special operations forces

7. SSgt Blake Mize, *Rapid Raptor: Getting Fighters to the Fight*, www.pacaf.af.mil/news, accessed December 29, 2017.
8. Ibid.
9. Ibid.
10. SSgt Divine Cox, *Wet-Wing Missions Fuel Austere U.S. Bases in Afghanistan*, www.afcent.af.mil/news, accessed December 30, 2017.
11. Ibid.

(SOF) are low density and high demand, expanding some of these air base opening capabilities into general purpose forces (GPF) is essential to ensuring the efficacy of future ABOs.

Chapter 4: Gap Analysis

> *". . . decentralized execution allows for major gains in flexibility and tempo at the tactical level."*[1]
>
> Lt Col Clint "Q" Hinote
> From: *Centralized Control and Decentralized Execution: A Catchphrase in Crisis?*

Doctrine

One of the most significant shortcomings in applying the current ABO construct in an A2/AD environment are doctrinal limitations. The underlying (though perhaps unstated) assumptions of current ABO doctrine is that the joint forces will have significant freedom of maneuver as well as air superiority. While this is perhaps not obvious in a cursory review of Joint Publications 3-17 and 3-18, an analysis of Annex 4-0 of US Air Force Doctrine, *Airbase Opening Transition and Transfer* and Air Force Instruction 10-401, *Air Force Operations Planning and Execution* is a bit more illuminating in this regard. As evidenced in Figure 1, USAF (read air component for the joint force) doctrine for ABO assumes the joint force will seize, establish, maintain, and ultimately expand the lodgment via the Force Modules listed in this so-called "Lego Slide". Named for the visible similarity to the children's toy, this graphic represents the fundamental air component conceptualization of how to open airbases and that ABOs will likely reflect the estimated timelines noted.

Delving a step deeper into the Force Modules, it is apparent the time horizon for these operations is fairly significant. The doctrinal estimates are that it will take twenty four hours to reach an initial operating capability (IOC) for the airfield in 24 hours.[2] This exceeds the potential

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1 Clint Hinote, *Centralized Control and Decentralized Execution: A Catchphrase in Crisis?* (Maxwell Air Force Base, AL: Air University Press, 2009), 69.
2. *Air Force Instruction 10-401, Air Force Operations Planning and Execution, Incorporating Change 4*, 13 March 2012 (Washington D.C.: Headquarters Air Force, 2006), 148.

OODA loop capabilities of an adversary presenting an A2/AD threat. Ultimately, the intent of an A2/AD adversary is to deny the capability of the adversary the use of an airfield. As a counter, the joint force should seek to operate inside of the adversary's OODA loop. This necessitates more rapidly opening, operating, and then closing airfields than the adversary is able to target them. In many cases the next action will be to open another airbase, continuing the cycle. As such, the current construct leaves wanting the rapid capabilities necessary for operations in the A2/AD environment.

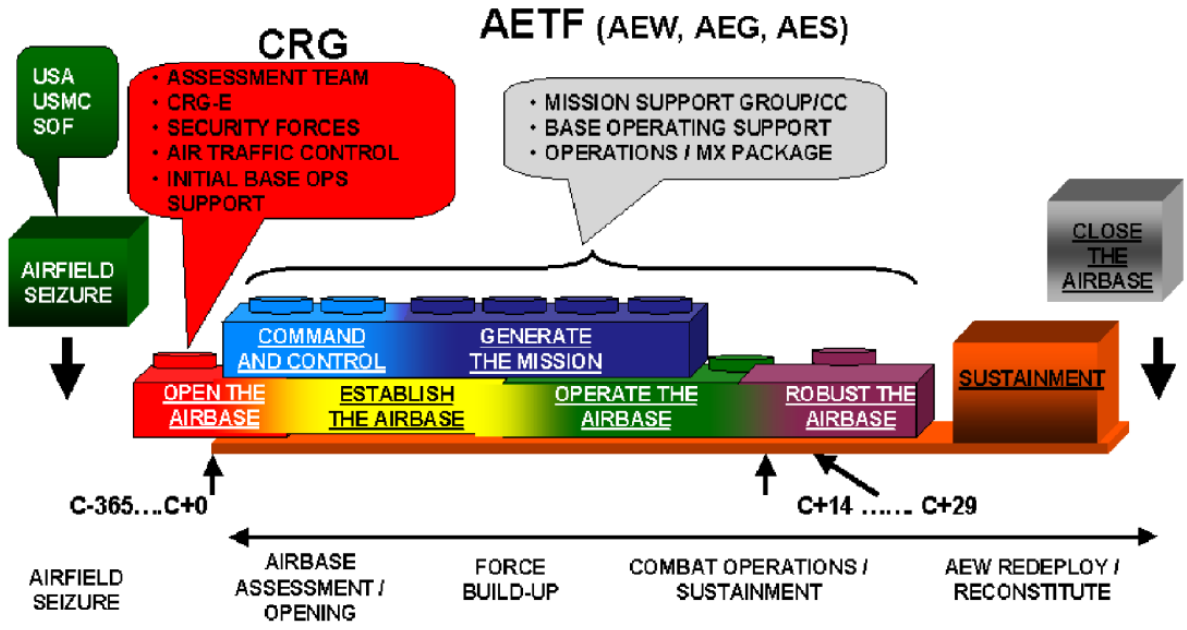

Figure 1 USAF Air Base Opening Force Modules[3]

These underlying assumptions have some significant follow-on implications for the nature of ABO. First, this paradigm assumes holding the airfield for some significant period of time. Secondly, it assumes that following the initial seizure, the holding of the airfield will be relatively unopposed. Thirdly, it assumes a large force to establish and expand the airfield with a long time horizon in which to deploy these forces. Fourth, as the nature of the ABO is to expand

3. USAF Doctrine Annex 4-0 and AFI 10-401 page 148.

the lodgment, the focus of the air operations at the APOD is on receiving and moving cargo for ground component forces involved in contested environment some distance from the airfield.

The first inherent trait of current ABO doctrine brought on by the assumptions of freedom of maneuver and air superiority is the assumption that the air base will be held for some significant period of time measured in months or years not days or hours. This was a very reasonable assumption for the Operations IRAQI FREEDOM and ENDURING FREEDOM, where the mission afforded such freedom of maneuver and air superiority. Further, the mission in these operations necessitated a presence of several months, in some cases several years, at the APODs.

The logistics tail associated with such a significant undertaking is not to be overlooked. Essentially two underlying doctrinal assumptions are that the joint force will have and maintain freedom of maneuver and will need to sustain APODs after opening. The combination of these two doctrinal assumptions has yielded another inherent aspect of joint force doctrine. Analysis of CRF planning doctrine indicates an expectation of multiple C-17 sorties to deliver CR forces to an APOD capable of anything more than an airfield assessment.[4] These compounding assumptions resulted in a bloated force construct for what the joint force requires for quick ABO under an A2/AD threat. These force structures assume levels needed to continually build out and ultimately sustain the APOD for a longer time horizon than would be necessary. These numbers expand further when including support to the ground component such as RPOE forces. In defense of existing CRF doctrine, there is an emphasis in both doctrine and training on the desire for appropriately tailoring down the pre-planned force structure to the minimum force required.[5]

4. *Air Force Tactics, Techniques, and Procedures 3-4.7, Contingency Response,* (Joint Base McGuire-Dix-Lakehurst: Headquarters USAF Expeditionary Center, 2017), Table 1.6.
5. Ibid.

However, the pre-planned force packages in doctrine appear to generate a mindset and culture focused on large-scale operations rather than tailored ones. Additionally, since C-17s do not have radar warning receivers, and have a larger radar cross section than the C-130, they are not the best tactical asset for operations in an A2/AD environment.[6] Given these limitations, C-17s are unable to determine the presence of enemy radar threats (no radar warning receivers) and are also more likely to be detected by the adversary radars (large radar cross section).

One final component of current general purpose forces (not SOF) ABO doctrine is that it is focused almost exclusively on establishing the APOD for the purpose of receiving and transferring cargo to ground component combat forces.[7] This is obviously born of Joint Force experiences in Afghanistan. The terrain and geography of the country drove the requirement for APODs to serve as the main method of cargo arrival into the theater of operations. Firstly, the country is landlocked so SPODs were not a viable option. Secondly, the terrain, geography, and politics of the surrounding countries made strategic overland movement into the theater of operations very time consuming. As a result, from early in the conflict, the APODs served as the strategic reception points for inbound cargo.

The challenge for the logistics and sustainment components of the joint force was to receive, process, and move this cargo off-airfield to the forces on forward operating bases in the vicinity of these airfields. The resultant doctrine, then, seems to be an attempt to codify the best practices of these efforts in the form of the JTF-PO and commensurate service and component TTPs. While this doctrine remains sufficient under these relatively ideal circumstances and

6. Lt Col Dawson Brumbelow, interview by the author, February 19, 2018. Lt Col Brumbelow is a C-130 Weapons Officer with extensive tactical planning and execution experience with combat airlift operations involving both C-17 and C-130 aircraft.
7. *Air Force Instruction 10-202, Contingency Response Forces* (Washington D.C.: Headquarters Air Force, 2015), 148.

assumptions, it is insufficient under the premise of a contested environment. An example of this pervasive problem is when a JTF-PO commander briefed the USTRANSCOM Director of Operations at a USTRANSCOM ABO exercise in 2014 that JTF-PO would only deploy into a permissive threat environment.[8] In the commander's defense, current doctrine does support his statement. However, the threat environments the joint force is increasingly likely to face demand a wider spectrum of doctrine from which to choose. Doctrine will then inform the operational attitude of commanders and ABO forces.

Command Relationships

The current construct for JTF-PO is that USTRANSCOM maintains operational control (OPCON) of the forces as described here are forward based. Also, AMC and 18th Air Force maintain OPCON of their forces if deployed unilaterally. Air component forces are, at times, sufficient to accomplish the APOD mission.[9] Each theater CRG trace their OPCON to their Geographic Combatant Command.[10] Each of these three instances are examples of the sometimes intricate nature of developing command relationships for ABO forces. Further, they indicate inconsistencies in the nature of these command relationships.

In his research paper on the nature of centralized control and decentralized execution, Lt Col Clint Hinote, a graduate of the School of Advanced Air and Space Studies and a command and control researcher, explores centralization and decentralization of both control and execution. Ultimately, he does not make a case for one over the other, but rather explores the

8. Mr. Kenneth Arteaga, GS-14, Deputy Commander for Operations, United States Air Force Expeditionary Operations School, e-mail to author February 20, 2018.
9. Lt Col Scott Davis. The author served as a staff officer at both 18th Air Force/A3 and AMC/A3 from 2012 to 2014 as the Chief of Combat Operations and Chief of Operational Warfare Integration respectively. He was party to staff efforts to deploy CR forces while on both staffs.
10. Castillo.

advantages and disadvantages of each.[11] His main assertion is that commanders focus command and control at the level of warfare where they require flexibility. That said, he does note that in the case of high demand, low density assets commanders will place control at higher levels in order to ensure balancing employment of the assets across the joint force. CR forces, as currently employed, are low density as indicated by their relatively low numbers across the joint force.

USTRANSCOM intent for centralizing ABO force command is to ensure flexibility across the globe for ABO operations. However, in an A2/AD environment, this solution may well fall short of the needed operational and tactical flexibility required to be inside of an adversary's OODA Loop. With the need to open an APOD, accomplish a discrete air component support mission, then exfiltrate the ABO forces, execution must happen in mere hours. Currently, the construct of AMC and USTRANSCOM ownership of these forces is not sufficient for this level of flexibility. If a GCC needs to rapidly open and close numerous APODs in rapid succession during an A2/AD threat, accomplishing a request for forces (RFF) or other coordination through USTRANSCOM would not only be unnecessarily difficult and lengthy, but would almost surely prohibit mission accomplishment.

Command and Control of ABO Forces

Additionally, USTRANSCOM and AMC are not able to provide sufficient command and control of ABO forces in an A2/AD environment. During preparation for an exercise in 2014, the 618 AOC (AMC's Air Operations Center) senior directors acknowledged they would unable to determine or even monitor the minimum force requirements for ISR and C2 assets during the exercise. This held true during execution requiring coordination with the theater AOC to get periodic (rather than near real-time) updates to this information. Further, the 618 AOC was

11. Hinote, 69-70.

unable to make the incredibly critical “go” or “no-go” calls based on the marshalling of joint forces for the exercise’s main airlift operation. This was because they lacked the communication tools to know the status of the joint force and to disseminate information to forces in a timely manner. [12] In the construct of the exercise, AOC planners overcame this through coordination permitting the theater AOC to make the “go” or “no-go” call and later notify the 618 AOC. While this construct worked in this case, the scenario was far short of an A2/AD environment. Additionally, the time horizon afforded to the planning for this exercise far exceeded the operational timelines possible for a similar contingency operation. Essentially, this C2 relationship will not be effective in an A2/AD environment where time is measured in minutes (or even seconds) rather than days or hours. Ultimately, this C2 construct is insufficient to ensure joint force survivability.

As illustrated in this exercise example, theater-level C2 ownership for CR forces engaged in an A2/AD environment will be more effective in most, if not all, cases. While the Joint Force Air Component Commander (JFACC) might hold this responsibility, ultimately, the CCDR will delegate to the component they deem appropriate. This will, however, be difficult to accomplish under the current construct because as previously noted, it is a time consuming process to change the operational control of forces to from one combatant commander (in this case USTRANSCOM) to theater CCDR. Additionally, there are currently not enough of these forces for each Geographic CCDR to own a sufficient number of their own ABO forces. The philosophy for this decision appears to be an economy of force. The concept of USTRANSCOM maintaining the capability (i.e., OPCON) of a small number of CR Forces is to afford strategic flexibility to open APODs throughout the world. However, this wrongly places the C2 flexibility

12. The author was present for the end of exercise briefing to the 18th Air Force Commander at the culmination of this exercise.

at the functional, rather than geographic CCDR. Currently, all CRF are beholden to doctrine and training policies set forth by AMC, which function as the "lead command" for CRF.[13] In this role, the AMC staff through the AMC/A3 sets specific policies for training, budgeting, and employment of CRF. Further, they serve as the subject matter experts for writing and approving doctrine for contingency response and ABO. While this lead command role is not in and of itself problematic, it has created a very specific paradigm. As an example, AMC develops the training mandated for all CR forces based upon their doctrine for force employment. This uniformity ensures interoperability of the forces, however, limits the tailoring of training specific to A2/AD environments for combatant commanders anticipating requirements for such capabilities. Further, the lead command construct doctrinally restricts the air components of other combatant commands from developing their own CRF outside of the AMC designed training program, policies, and doctrine.

Force Structure

Given the challenges of the current joint force end strength number, the force structure of ABO forces is also limited in size. The USAF currently has four active duty contingency response groups and one Air National Guard contingency response group. In addition to these forces, USEUCOM under US Air Forces Europe (USAFE) and USPACOM under US Pacific Air Forces (PACAF) each maintain their own CRG.[14] Furthermore, the US Army also maintains two RPOEs, both located in the continental US. Each of these CRGs can deploy up to 135 personnel while each RPOEs has significantly less personnel (less than 100). The CRGs also

13. AFI 10-202, 8.
14. Thomas interview.

possess tailored deployable capabilities in the form of Contingency Response Elements of 50-135 personnel led by an O-4 or O-5.[15] Overall, these are small numbers across the joint force.

Beyond having fairly limited numbers overall, the CRGs are all designed as mobility, specifically airlift and aerial refueling, forces. This is an Air Force Specialty Code (AFSC) identifier and, in turn, limiter. All of the personnel with aircraft operations and maintenance experience in CRGs have specific mobility and aerial refueling background. None of these personnel have background operating or maintaining fighter, bomber, ISR, or other assets. As a result, the commanders of the CRGs and their associated squadrons are rated officers with airlift experience. Further, the maintenance personnel in the CRGs are all from mobility asset background and experience. This construct makes great sense in the paradigm of current ABO doctrine that is so mobility and cargo focused. Leadership from officers experienced in these mission sets is not only useful, but arguable enhances the unit effectiveness. The aircraft maintainer experience complements the construct as the aircraft received and launched by CRGs are almost exclusively airlift assets. This mobility personnel focus works well under the existing construct, but is limiting if CRG personnel need to receive and launch fighter, ISR, C2 or other air assets.

In addition to the personnel construct, the CONUS basing for three out of the five CRGs is a potential limitation. The ability to afford operational agility for ABO forces from within the CONUS is extremely limited. Firstly, deploying these forces forward into a near peer, A2/AD environment is time consuming. An A2/AD adversary may not afford the lead time for deploying forces that a less savvy adversary might–as Saddam Hussein did in 1990 prior to Operation DESERT STORM. Further, in an environment that might require more frequent but smaller

15. Ibid.

ABO employing CR forces the forces will have more frequent reconstitution needs. Currently, the forces would need to redeploy back to the CONUS in order to retrofit in garrison. That increases the timelines between potential operations.

Posture

Considering enhancements to ABO posture is also important. This includes assessing and upgrading current infrastructure and agreements around the world. In areas of potential future conflict US mobility forces must assess the status of existing infrastructure, and when needed, invest in infrastructure enhancements. As an example, the interior of sub-Saharan Africa lacks an appreciable number of operable runways. This is one area where small investments could result in great advantages for future operations. Some areas of the Pacific theater are much the same. The creation of infrastructure alone, however, is not sufficient to enhance ABO capability. US Department of State leaders will also have to seek enhancements to agreements permitting basing and overflight of operationally significant locations. These enhancements to infrastructure and agreements will enhance operational agility with a higher number of potential operating locations. Not only does this increase options for joint force commanders planning operations, but also complicates targeting by adversaries by increasing the number of potential targets.

Training

Currently, doctrine and policies for CR forces do not make any mention of A2/AD nor acknowledge potential employment of ABO forces in such a threat environment. As such, the training designed for these forces does not spend much, if any, time on the threats associated with an A2/AD environment. Rather, the force protection portion of training focuses on an environment where the joint force enjoys air supremacy and there is no chance of an air attack (to include cruise missile attack) against the seized APOD. It does spend appreciable time on

base defense based upon lessons learned from Operation INHERENT RESOLVE and the potential for insurgent and regular forces attacking an APOD after seizure.[16]

Further, the training for these forces is not focused on airbase operations requiring launch of air component missions other than those focused on cargo movement.[17] In fact, the Joint Mission Essential Tasks for JTF-PO address in-transit visibility (ITV) for cargo, but do not address ability to support ISR, fighter, bomber or other assets.[18] The USTRANSCOM derived training and exercise program for JTF-PO focuses on JMETs; the CRW and ARPOE focus solely on cargo movement operations. Additionally, the personnel of the CRWs are airmen with air mobility backgrounds. As such, their maintenance personnel and aircrew members are all from cargo and tanker aircraft. This skill set is essential for the narrowly tasked cargo movement focus of JTF-PO. However, in a robust A2/AD threat, there will likely be need for C2, ISR, bomber, fighter and other air breathing assets. The CRW and JTF-PO forces are not currently prepared to support such assets and missions.

USTRANSCOM optimized CR forces only to support ABO operations in support of cargo movement. The training for the personnel component exacerbates the mobility mindset of the personnel. The AMC Operations Directorate staff derive the training guidance for CR forces from their stated USTRANSCOM Joint Mission Essential Tasks (JMETs) for JTF-PO. Given the primary focus of the USTRANSCOM mission sets, these JMETs only focus on APODs focused on cargo movement operations.[19] While the airfield survey and command and control capabilities of JTF-PO are essential to any air base opening, there is a need to focus on missions

16. Thomas interview.
17. Ibid.
18. Ibid.
[19] Thomas interview.

other than cargo movement for ground forces. APOD operations in an A2/AD environment may also morph in aerial port of embarkation for certain components of the force. Essentially, the APOD operations personnel receive, reconstitute, and launch any of a number of mission sets or assets as part of the joint force. This could include ISR assets, command and control assets, or even some amount of joint forcible entry forces requiring refueling or additional supplies before their next seizure. While all ABO events have certain similarities, the nature of establishing a sustained cargo movement operation is different than rapidly receiving and relaunching an ISR asset. Ensuring adequate training on such mission sets is not a current focus of AMC as the lead command based upon their policy and doctrine guidance.

Further, ABO forces do not currently contain a sufficient number of forces capable of enhancing air base resiliency. Specifically, ABO forces do not have indigenous capability to perform rapid runway repairs required after an attack by and A2/AD adversary. Though there is some inherent civil engineering capability, it is not sufficient. This ability to rapidly repair then reestablish operations is central to the concept of air base resilience. In an environment of advanced A2/AD threat capability, there are ballistic missile and bomber threats that can crater runways and aircraft parking ramps. The ability to assess and repair this type of damage quickly is central to airbase resilience. It is vital that ABO forces enhance their ability to afford resilience to ABO operations.

Equipment Acquisitions

Codifying lead command responsibilities for AMC afforded some uniformity of acquisition processes for ABO forces, specifically USAF CRG forces. However, this is not sufficient in order to ensure interoperability. Currently, the CRGs in the CONUS all fall under AMC and, therefore, are beholden to the AMC staff for acquisition processes and advocacy. As a

result, these units have interoperable equipment and are able to integrate when required. This is not the case for the CRGs in USAFE and PACAF. While they might strive to acquire the same (or similar) equipment to the AMC gained units, their chain of command for the Title 10 Organize, Train, and Equip functions do not pass through AMC. The ramification of these inconsistent authorities is that there are three different staff organizations with varying levels of interest, capacity, ability, and agendas as pertains to advocacy for CRG equipment. Ultimately, the result is differences between the CRG equipment in USTRANSCOM, USEUCOM, USPACOM and the National Guard.[20]

Another aspect of acquisitions for USAF CRGs pertains to the focus on current doctrine and policy that assumes an adversary that is not able to field an A2/AD threat. As noted by a general officer who recently spoke at the Joint Forces Staff College, Joint Advanced Warfighting School in response to a question from the author, there is not a coherent effort to acquire uniform communications equipment across CRG and other C2 assets. Further, USTRANSCOM did not tailored the assets currently fielded and in acquisition to the unique threats posed to communication systems in a robust A2/AD environment. These threats include denied or degraded communications across all spectrums. While more uniformity is great, it will be important to also work to acquire assets able to meet more robust threat environments. Specifically, robust communication systems are incredibly important to this effort. A2/AD capable adversaries will almost surely degrade, deny, or disrupt some or all communications. It is important that ABO forces have robust communication systems capable of mitigating these threats.

20. Thomas interview.

Chapter 5: Recommendations

> *"Neither a wise man nor a brave man lies down on the tracks of history to wait for the train of the future."*
>
> Dwight D. Eisenhower[1]

Applicability of the OODA Loop

The goal of ABO in an A2/AD environment is for the joint force to open, operate, and close (retrograde out of) an air base before an adversary can complete their OODA Loop and execute and attack. As applied to ABO in A2/AD, the OODA Loop is useful to understand the adversary for two specific effects. The first is to disrupt the adversary's OODA loop through myriad possible means. That is useful for operational and strategic planning and operations but outside the scope of this study. The second is to understand the time horizon limitations of an adversary's OODA loop. The thrust of this analysis is focused on operating inside of the adversary's OODA Loop for their A2/AD targeting capabilities.

Proposed Operational Construct

The supported component for ABO in the A2/AD environment is most likely the air component. ABO forces will need to rapidly open an airbase, receive assets, retrofit or fuel the received asset, launch the asset, then retrograde themselves out of the airfield. These airfields will be used almost as aircraft carriers are used to force project, however for assets not able to use carriers for force projection including bombers, ISR, C2, and fighters not capable of carrier operations. While carrier operations provide both force projection and combined arms, they do have limitations. Not the least of these limitations is the number and types of aircraft capable of carrier launch and recovery operations. Airbases are required to optimize alignment of

1. Rebecca Friedman Lissner and Micah Zenko, *There is No Trump Doctrine, and There Will Never Be One*, http://foreignpolicy.com/2017/07/21/there-is-no-trump-doctrine-and-there-will-never-be-one-grand-strategy/, Accessed December 20, 2017.

combined-arms forces in the cyber, air, and other domains to take a fight to the home terrain of a near peer adversary capable of A2/AD threats. One of the main lines of effort for the early portion of these operations will, in fact, be to disrupt, degrade, and ultimately eliminate the adversary ability to employ their A2/AD capabilities.

The joint force will not necessarily need to seize these airfields as the concept of joint forcible entry has long maintained. The airfields involved in these A2/AD ABOs will likely be in friendly or neutral environs as pertains to the ground threat. That is to say that there will likely be little to no resistance on the ground to the ABO forces other than potential for pilfering from local criminal elements. Perhaps there would even be a terrorist threat or small unit probes of the perimeter, but not the environment the joint force has come to know in Iraq and Afghanistan. Rather, the threat to these airfields will be from ballistic missile, indirect fire, or perhaps air threats.

From a ground based threat perspective these bases will proximate to, but not necessarily in the threat environment. A historical FP analogy is to compare these ABOs with early joint force airfield operations at location such as Karshi-Khanabad, Uzbekistan and Ali Al Salem, Kuwait. While there was need for FP at these locations, the US (and coalition partners) were invited by the host nation to operate out of these locations. The nuance in these two historic cases is that neither the Afghan Taliban nor the Iraqi military posed A2/AD threats to the joint force at these operating locations. Essentially, there was only the possibility of ground based threats rather than the distinct possibility of targeted and accurate ballistic missile or other threats to the resilience of airbase operations.

In order to operate inside of an adversary's OODA Loop, it will be essential for the air component to rapidly open airbases. The new aspect of this is the need to keep it open only so

long as to receive, refit, and relaunch air breathing assets. Following whatever operation for which the airfield opens, the ABO forces will need to rapidly retrograde out of the airbase. The operational and tactical situation will dictate whether the ABO forces move to another airfield for opening or retrograde entirely out of the operating environment to a garrison status.

The historic challenge of defending airfields is that they cannot move. The adversary will eventually determine the location of all viable airfields in the area of operations. The nature of A2/AD threats significantly expands the operational area that an adversary can potentially affect. While this does present a significant challenge to the joint force, it also affords a certain degree of opportunity. Adversaries now have to maintain situational awareness on significantly larger operational areas–and more potential airfields. It is important to note that the ability of an adversary's weaponry and effects to reach a certain threat sphere does not inherently correlate to their ability to find, fix, and track targets within that sphere. Hence, the goal of ABO in the A2/AD environment is to exploit the find, fix, and track challenges associated with larger operational spheres–this is the adversary's OODA loop and the joint force goal is to operate inside of it.

Essentially, the goal is to create a massive "shell game" or "3 card monte" game for the adversary. There are a finite number of known and potential aircraft landing sites (roadways, unimproved landing areas, etc.) within a given geographic area. The larger the area, the larger the number of sites where aircraft could potentially land. This is a seam with the concept of enhancing posture–as the number of potential aircraft landing locations increase, so does the adversary's monitoring challenge. Increasing infrastructure and agreements around the world only stands to further complicate the adversary's targeting challenge further and multiply opportunities for joint force planners. This is extending the time horizon of adversary forces to

leverage ISR and other assets to find, fix, and track ABO and potential ABO within the area. It takes time and effort for threat actors to assess if forces are moving into their area and if they are transiting to establish some form of operations. The joint force must poise to open, operate, and retrograde out of airfields in the A2/AD threat sphere in less time than it takes for the completion of the adversary's OODA Loop to find, fix, track, and target the ABO forces.

Data Call

There must be a deliberate effort to determine potential requirements for ABO and how likely it is that those operations will occur within an A2/AD environment. This assessment must cut across the joint force, combatant commands, and their components. Arguably, USTRANSCOM/J5 is well suited to lead this effort, but it will require inputs from all of the combatant commands. This effort must consider the potential for and number of these operations. Existing plans is a great starting point for this data call. Those planners involved, however, must go further and consider potential contingencies not yet addressed through a deliberate planning process. This can help to determine the number of forces required. The Joint Staff with the CJCS role as a global integrator will need to assess these requirements in aggregate to determine possible force structures. Essentially, they will have to assess risk–how many ABO forces should the Joint Force have considering the number of and potential for the ABO on a global basis.

In addition to assessing the number and potential of ABO, it is vital that the assessment effort also address the potential threat environments these ABO forces will face. While A2/AD is an overarching term, it lacks the specifics each combatant command will be able to provide regarding their areas of operations (functional CCDRs) and areas of responsibility (geographic CCDRs). Understanding the threat environment is vital to the development of doctrine,

capabilities, and, ultimately, training for these ABO forces. Absent a sufficient understanding and ultimately balancing of the potential threats, setting force posture will be terribly difficult. Threats will drive the doctrine for these forces at the operational and tactical level. That will, in turn, drive both the force make-up and training for the personnel. Additionally, acquisition to provide adequate, appropriate equipment for these forces will ultimately derive from the doctrine as well.

Doctrine Development

Once the mobility community of interest develops a sufficient understanding of the expected operational environment, it will be important to develop comprehensive doctrine for ABO in an A2/AD environment. This is not to say that the existing doctrine for Joint Air Mobility Operations (Joint Publication 3-17) and Joint Forcible Entry (Joint Publication 3-18) is fundamentally incorrect. On the contrary, Joint Publications 3-17 and 3-18 are still valid as not all ABOs will occur in A2/AD environs. Further, these two publications can serve as foundational principles for operations in the differently contested theater with active A2/AD threats. Their most significant shortcoming at the moment is that none of these publications address ABO in an A2/AD environment. In fact, neither Joint Publication 3-17, *Air Mobility Operations* nor the Air Force Tactics, Techniques, and Procedures manual for Contingency Response even mention A2/AD–much less address the operational and tactical nuances of operations in such a threat environment. This absolutely must change as the joint force prepares for operations in a differently contested environment than recent operations.

This new doctrine, however, must be much more comprehensive in development than the standalone air mobility operations publication. Inherent in all operations facing an A2/AD threat is the need for minimizing operational and tactical seams between services and components

within the joint force. The intent of ABO within the A2/AD environment will be fundamentally different than ABO within other operational environments. Previously, the focus on JFE and ABO was to seize, establish, and expand a lodgment in support of on-going ground operations in the vicinity of the seized airfield. However, this paradigm fails to accommodate ABO in the A2/AD threat realm.

New doctrine must also address the operational and strategic implications of the tactical effects of A2/AD. Adversaries in the A2/AD environment have significant ability to interrupt the communications of forces operating within the operational area. Further, some adversary capabilities could isolate forces necessitating decentralized decision making. Historically, commanders at the operational or even strategic level of command and control have held this level of decision making for ABO forces.[2] As a means to address this, there is a need for doctrine covering mission-type orders for ABO forces.

While JTF-PO currently does operate under fairly standard orders, the overarching command and control construct essentially assumes nearly continuous communication with the forces in the field because the operational environment for the past decade has permitted this level of communication with all tactical force. This level of continuous communication is not likely in an A2/AD environment. As such, the doctrine for ABO must evolve to account for this. Mission-type orders for ABO forces directing commander's intent, areas of operations, and contingencies for the fielded forces being isolated from operational level command and control is critical.

Command Relationships

2. Thomas interview.

It is important to challenge the assumption that USTRANSCOM can (and should) maintain command and control of ABO assets in an A2/AD environment. The dynamic nature of an A2/AD threat will require theater command and control, missile and threat warning, and asset de-confliction among other things. It is important to nest control at the level of warfare where the most flexibility is necessary. At the time of a robust A2/AD fight with a near peer competitor, this flexibility and the joint force weight of effort will be toward the geographic combatant commander responsible for the fight.[3] In the effort to affect efficiencies, ABO forces should reside with USTRANSCOM and CHOP to GCCs for the A2/AD operations. This will requires close coordination and the ability for USTRANSCOM to forward deploy the forces then rectify the orders from the Secretary of Defense at a later time.

ABO Personnel Development

As with any military operation, personnel are central to the effectiveness of the operation. As a great USAF Chief Master Sergeant once said, "processes do not get things done in the military, people do."[4] This is especially true for operations involving significant need for adaptation, speed of operations, and high threats. Each of these elements will surely be present in ABO in the contested A2/AD environment and, to overcome them, it is vital that the joint force ensure deliberate personnel development for ABO forces. Specifically, the joint force must determine the appropriate experience and skill make-up for standing ABO forces. As previously noted, currently the air mobility and ground logistics career fields dominate the standing ABO forces. This has served the force well to this point, however, involvement of personnel with knowledge of and experience with C2, ISR, bomber, RPA, and fighter assets is critical. It is very likely that future ABO events will require support for these assets. Rapid Raptor is an indicator

3. Hinote, 18.
4. Chief Master Sergeant (ret.) Mickey Spillane. Interview with author December 10, 2017.

of efforts to move towards this capability, but does not include expertise outside of direct support to the F-22. A robust force with experience supporting assets and opening airbases is critical, but requires balance.

Another component of this force development ties to service channels, but is a requirement for the joint force. While there are myriad channels to track all types of experience and training held by members of the joint force, there does not seem to be a consolidated methodology to track experience with ABO. This would aid in building teams and units for ABO in the future. It would also assist respective personnel systems to ensure that they have field grade officers with this experience for both planning and execution purposes.

In addition to these considerations, there is also the potential for a greater number of ABOs of smaller scale occurring simultaneously. With this consideration, the current personnel make-up of ABO forces is perhaps out of balance or, even too small. While this study does not intend a complete assessment of unit rosters, there should be consideration for adding additional aircraft maintainers (to include weapons loaders), aerial port (aircraft upload/download) personnel, and C2 personnel. Combatant commanders will use these three subsets of CRGs and RPOEs in the type of rapid ABO and retrograde envisioned in this study for the A2/AD environment.

Role of the Services

Another aspect of future development must address the Title 10 US Code role each of the services play in developing and maintaining ABO forces. This role is significant as it drives the force organization, force development and training, as well as acquisitions for ABO forces. As outlined in the discussion of personnel development, the service departments have a vital role to play in selecting personnel for ABO roles and tracking their experience with ABO planning and

operations. Failing to adequately track development of these personnel within each service has the potential to leave the joint force unable to field a knowledgeable and experienced team for ABO in the future. The concepts of organizing the force include the type of personnel selected for service in ABO units as well as the nature of ABO units (standing force or otherwise). In addition to personnel aspects, the need for adequate training falls in no small part on the service departments. In their role to provide training to forces, the services must ensure that their ABO training programs are forward looking.

Beyond this, the services are responsible for equipping their forces–including those with the joint mission of ABO. Currently, even within services there is not always coherent, deliberate efforts to ensure interoperability of acquired systems. Beyond this, the acquisitions process is often time consuming. The unfortunate aspect of this is that newly acquired systems may lag an adversary's capabilities. In this regard, the A2/AD environment will likely have significant effects on communications capability and equipment, ultimately negatively impacting the ability of operational and strategic commanders to command and control ABO.

Training

First and foremost, initial qualification training and education for ABO forces must evolve to address the nature of their operations in the A2/AD environment. Ideally, military training and education programs derive their content from doctrine. The goal of these programs should be to educate personnel on the content and intent of the doctrine and train them to accomplish their mission set in accordance with this doctrinal guidance. As such, once appropriate staffs update ABO doctrine, training for ABO personnel must adapt to include the new doctrine.

The training and education professionals of the joint force associated with ABO, however, cannot afford to wait patiently for the staffing of new doctrine to complete. On the contrary, the

training and education personnel have a critical role to play in the development of the new doctrine. Often, training and education personnel have profound knowledge of doctrine and policy. Moreover, they may well be suited to identify shortfalls of both existing training paradigms as well as needed changes to doctrine, tactics, techniques, and procedures. Ensuring early involvement of training personnel serves two important functions. First, it will leverage the subject matter expertise often resident in ABO training and education school house instructors. Secondly, it will aid the ABO school house instructors to lead turn development of new courseware in line with new doctrine. This complementary relationship of intertwining doctrine development with the development of new schoolhouse courseware is beneficial to all involved as ABO operations evolve for mission sets including A2/AD environs.

Beyond the involvement of training and education personnel in the development of new doctrine, they must develop new training paradigms specific to the tactics, techniques, and procedures (TTPs) needed to operate in the A2/AD environment. This must include addressing the nature of the A2/AD environment and the character of the tactical threats it will pose to ABO forces writ large–independent of the individual's career field specialty. These TTPs will build upon the existing training, but will have a different focus. New TTPs must address the realities presented by the operational environment, including lethal threats such as ballistic missiles and non-lethal threats such as communications jamming. These tactics must address tactical aspects of opening and operating airbases in the contested environment to include command and control when adversary actions limit to remove communications capabilities. A near peer adversary capable of fielding a legitimate A2/AD threat is also likely capable of other threats that will adversely impact ABO operations. The specifics of these TTPs will reveal themselves throughout the doctrine development and lesson development processes.

Another area of training that will require effort is a seam within the personnel development aspect of future ABO operations. The current preponderance of mobility-centered personnel in the standing ABO forces may not be effective for ABO operations in the A2/AD environment. As discussed, there might be need to receive, service, and launch assets other than airlift aircraft. In order to best posture ABO forces to support these type of operations will require either training maintenance personnel currently in the ABO force to adequately support assets such as ISR, C2, bomber, fighter, and RPA or recruiting personnel from these backgrounds into the standing ABO forces. This will come at a cost to the joint force as it will require either more training time for existing personnel or an overall increase in personnel with certain skills.

In addition to specific aircraft capabilities, there are other aircraft maintenance skills that could be required in the A2/AD environment. Specifically, proficiency in supporting wet-wing and hot refueling will be essential. This will be a factor for both standing ABO forces as well as aircrews who will be involved in the operation. While historically a niche capability, it will have to become much more proliferated so that any asset capable of supporting such an operation will undoubtedly have aircrew qualified to do so. It can no longer continue to be a special qualification. This is true also for ABO personnel who would support such a TTP. Aircraft maintenance and other aircraft ramp personnel will all need to have sufficient proficiency to support these operations if tasked. These skills and operations are tactical in nature. However, the approval authority to transition these capabilities from special operations to general purpose forces resides at the high operational level.[5]

[5] Cox.

As noted in joint doctrine, "intra-theater movements are usually controlled through a theater-specific C2 node, and requirements are met by allocating theater-assigned forces."[6] In geographic combatant commands, this role is filled by the theater's Air Mobility Division (AMD).[7] Another paradigm that will require change is training for personnel assigned to the Air Mobility Divisions (AMD) in all of the Air Operations Centers. (AOC). Currently, the USAF Expeditionary Operations School provides this training, at Hurlburt Field, Florida. Graduation from this course is required for all personnel before they are mission ready for operations within the AOC. The course occurs at Hurlburt because that is the location of the 505th Training Squadron also located there.[8] The AMD specific training will need to include information about the capabilities and limitations of the new ABO paradigm. The AMD personnel will serve as the operational-level connective tissue for the planning and execution of the fielded mobility forces with other air-breathing assets. The personnel in the AMD will serve to provide the planning, command and control, and operational-level decision making advocates for fielded ABO forces falling under a theater CCDR. As noted in joint doctrine,

Recommendations for Further Research

Firstly, the completion of a detailed analysis of the potential for and the number of ABOs in an A2/AD environment must be undertaken. This data call will facilitate accurate risk management across the force. Secondly, the Joint Staff and the Office of the Secretary of Defense must commence assessment of current force alignment and construct to assess proper alignment of ABO forces across the combatant commands. Thirdly, appropriate staffs must develop ABO doctrine for the A2/AD environment at the operational and tactical level. Fourthly,

6. JP 3-17. I-11
7. Ibid.
8. 505th Training Squadron Fact Sheet http://www.505ccw.acc.af.mil/About-Us/Fact-Sheets, accessed on December 20, 2017.

AMC as the lead command for ABO forces should re-asses all CR training and exercising in light of this new doctrine.

Next, appropriate staffs must complete analysis of personnel within the ABO forces based upon the data call mentioned previously. This analysis should consider not only the make-up of current units and the number of current units. It should go beyond this analysis and consider the possibility of employing a concept similar to that of the British Royal Air Force (RAF) which employs an on-call capability for ABO from within other forces.[9] Essentially, rather than have a standing ABO force units, the RAF has trained ABO personnel across their force. RAF headquarters staffs track the qualifications of these personnel. Additionally, the trained members must maintain a currency through a periodic exercise program.[10] When needed these forces are called from their home units, consolidate together, and forward deploy. There are some obvious inherent challenges with this paradigm. However, it is a method to rapidly increase the number of ABO forces within the joint force and is a potential method to mitigate risks for the Joint Force.

9. Operational Training Centre Capabilities Presentation, Presentation to the United States Expeditionary Center, Expeditionary Operations School Contingency Response Instructor Cadre, Joint Base McGuire-Dix-Lakehurst, July 2016, attended by the author.
10. Ibid.

Chapter 6: Conclusion

> *"To each there comes in their lifetime a special moment when they are figuratively tapped on the shoulder and offered the chance to do a very special thing, unique to them and fitted to their talents. What a tragedy if that moment finds them unprepared or unqualified for that which could have been their finest hour."*
>
> Unknown[1]

Joint force ABO forces are not adequately prepared to effectively accomplish ABO and rapid closings in a near-peer A2/AD environment. There are several significant gaps in the current doctrine, force structure, training, command and control, command relationships, and acquisition processes for these ABO forces. However, efforts to better understand the operational environment through application of the OODA Loop and data calls will assist forces in preparing for these A2/AD threats to ABO. Further, improvements to the doctrine, command relationships, training, role of the service departments, and personnel development will ensure the continued efficacy of joint force ABO in an A2/AD operating environment.

The joint force has not optimized current doctrine, training, and force structure for operations within an A2/AD environment. Existing forces are not suited to operations in the A2/AD environment because they operate in larger force increments than such an environment will permit. Further, the current focus of these forces is cargo movement operation as part of JTF-PO, but operations in an A2/AD theater might require support of tanker, fighter, bomber, and ISR platforms. Currently, these platforms are not elemental to training or manning for USAF CRFs. This is a product of both current force structure and training. It is also vital to ensure acquisition of assets appropriate to supporting ABO in the A2/AD environment.

1. Richard M. Langworth, *Winston Churchill, Myth and Reality: What He Actually Did and Said*, (Jefferson, North Carolina: McFarland and Company, 2017), 216. (This quote is often attributed to Sir Winston Churchill, but is not documented as such.)

Despite the best efforts of our nation, there are still nations in the world that seek to do harm to the US and its interests. Adversaries are rapidly enhancing and expanding their ability to field credible A2/AD threats. In order to maintain our ability to counter these threats the joint force must enhance its ability to project power into these contested areas. Doing this will require adapting the current ABO construct to a more agile paradigm involving a smaller number of more highly trained forces.

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